

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012811**Date Inspected:** 26-Mar-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1500**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Bernard Docena, Jesse Cayabayab			CWI Presenting:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	SAS OBG 2E/3E-A,F		

Summary of Items Observed:

The Quality Assurance (QA) Inspector, Rick Bettencourt was on site at the job site between the times noted above. The QA Inspector was on site to randomly observe the in process welding and inspection of the weld joints identified as 3E/4E-A and the following observations were made:

3E/4E-A1-A5

Upon the arrival of the QA Inspector it was observed the ABF welders Dan Ieraci and Jordan Hazelaar were setting up the submerged arc welding (SAW) equipment to begin the root pass of the above identified weld joint. The QA Inspector noted the fit inspection had been completed by the Smith Emery (SE) Quality Control (QC) Inspector Jesse Cayabayab prior to the QA Inspectors arrival. The QA Inspector performed visual testing (VT) and dimensional measurements of the fit up after the steel backing was welded on both sides and the members were joined by welding and prior to the commencement of the SAW. The QA Inspector located several areas of the weld joint which had unacceptable planar misalignment. The misalignments recorded by the QA Inspector are as follows:

3E/4E-A1

10mm-3mm misalignment beginning at A1 and spanning 150mm toward A2 (length 150mm).

2mm-3.5mm of misalignment beginning at 4200mm-4760mm (length 560mm).(pictured below)

3E/4E-A4

6mm-2mm of misalignment beginning at 470mm-1420mm (length 950mm).(pictured below)

3E/4E-A5

13mm-3mm of misalignment beginning at A5 and spanning 420mm toward A4 (length 420mm).

The QA Inspector noted the readings identified above begin with the most significant off set or misalignment and

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gradually slope toward the smallest off set or misalignment. The QA Inspector noted an incident report was generated for the unacceptable fit up due to planar misalignment.

3E/4E-A5

During the random dimensional verification of the fit up for the above identified weld joint, the QA Inspector located a 15mm crack in the SMAW tack weld. The QA Inspector randomly observed the crack started at the beginning of the weld tab in A5 and propagated 15mm into the weld. The QA Inspector informed the SE QC Inspector Jim Cunningham of the crack. The QA Inspector randomly observed Mr. Cunningham perform magnetic particle testing of the cracked tack weld. After the MT was completed the QA Inspector randomly observed the ABF Welding Quality Control Manager (WQCM) Jim Bowers arrive on site and instruct the ABF welder James Zhen to remove the crack by welding. The QA Inspector randomly observed the ABF welder remove the crack utilizing a grinding disc from the runoff tab to approximately 55mm past the end of the original indication. The QA Inspector noted the tack weld was removed down to the steel backing. The WQCM instructed the ABF welder James Zhen to re-weld the excavated area utilizing SMAW. The QA Inspector noted an Incident Report was generated for re-welding the excavated cracked area with out engineering approval. After the tack was re-welded the QA Inspector noted the submerged arc welding (SAW) root pass was started.

A1-A5

Upon the arrival of the QA Inspector it was randomly observed the ABF welding operators Jordan Hazelaar and Dan Ieraci were setting up the submerged arc welding (SAW) machines in preparation of performing the SAW root pass. The QA Inspector noted the flux cored arc welding (FCAW) full length tack weld was previously deposited on both sides of the weld joint against the bevel and the steel backing bar. The QA Inspector randomly observed the ABF welding personnel had pre determined and indicated with a distinguishing marking on base material the sequencing in which the joint would be welded. The QA Inspector observed the weld was broken into 6 sections beginning in the center and moving outward toward the edges of deck plate.

The QA Inspector randomly observed the ABF welding operator Jordan Hazelaar begin welding the SAW root pass in the center of A3 and weld to the end of section A1 and the welding operator Dan Ieraci welding from the center of A3 to the end of A5. The QA Inspector randomly observed the SAW parameters for Mr. Hazelaar and they were 549Amps, 32.7 Volts and a travel speed of 380mm/min. The QA Inspector randomly observed the SAW parameters for Mr. Ieraci and they were 643 Amps, 32.3 Volts and a travel speed of 400mm/min. The QA Inspector noted the SAW parameters appeared to be in general compliance with ABF-WPS-D1.5-4042B-1. After the root pass was completed between A1-A5, the SE QC Inspectors performed MT of the root pass. The QA Inspector noted no relevant indications were located at the time of the testing. After the root pass was completed the QA Inspector randomly observed the ABF welding operators begin performing the SAW fill pass.

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Summary of Conversations:

The QA Inspector was informed by the QA Task Lead Bill Levell of a conversation with the ABF Welding Quality Control Manager (WQCM) Jim Bowers. Mr. Bowers informed Mr. Levell that no weld joint has been accepted up to today's date. Mr. Bowers went on to inform Mr. Levell that all completed weld joints are still in process and ABF will likely go back and perform additional grinding, welding and or non destructive testing (NDT).

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916)-813-3677, who represents the Office of Structural Materials for your project.

Inspected By: Bettencourt,Rick

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer